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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/882,473	06/14/2001	Niels Knudsen	5150-47800	8104
35690	7590	09/21/2004		EXAMINER
				HA, DAC V
			ART UNIT	PAPER NUMBER
			2634	

DATE MAILED: 09/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/882,473	KNUDSEN, NIELS	
	Examiner	Art Unit	
	Dac V. Ha	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 14 June 2001.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-5 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-5 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>02/11/02</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1-5** are rejected under 35 U.S.C. 103(a) as being unpatentable over Embree (US 6,104,222) in view of Adams (US 5,638,010).

Regarding claim 1, Embree discloses the claimed subject matter including "a preconditioner, wherein the preconditioner receives an input clock signal, wherein the preconditioner receives a master clock signal, wherein the preconditioner outputs a modified clock signal that is synchronized to the master clock signal" (Fig. 2, combination of elements 110, 120, 125, 130, 140; col. 3, lines 9-57), and

"a" "phase locked loop coupled to receive the modified clock signal output from the preconditioner, wherein the" "phase locked loop also receives the master clock signal, wherein the" "phase locked loop outputs an output clock signal, wherein the output clock signal is a version of the input clock signal synchronized to the master clock signal" (Fig. 2, element 150; col. 3, line 57 to col. 4, line 25); further Embree also implies the claimed subject matter "wherein the" "phase locked loop does not introduce phase noise to the synchronized version of the input clock signal" in col. 1, lines 58-65 in that, the introduction of element 150 into the system disclosed by Embree would overcome the noise condition in the prior art.

Embree differs from the claimed invention in that Embree does not disclose that the phase locked loop (PLL) is a “digital phase locked loop” (DPLL). Embree, however, suggests that any suitable PLL in the PLL technology could be utilized (col. 3, liens 3-8). In the same field of endeavor, Adams discloses the utilization of DPLL (Fig. 3). Since DPLL provides more accurate and higher speed, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the PLL in Embree with a DPLL, as suitable, i.e., as the one in Adams, to improve overall operation of the system.

Regarding claim 2, Embree further disclose the claimed subject matter “wherein the preconditioner operates to noise shape phase noise of the synchronization to higher frequencies in col. 1, lines 16-34; and “wherein the distal phase locked loop operates to remove the phase noise at the higher frequencies” in col. 1, lines 58-65 in that, the introduction of element 150 into the system disclosed by Embree would overcome the noise condition in the prior art.

Regarding claim 3, Embree further disclose the claimed subject matter “wherein the preconditioner has a higher bandwidth than the digital PLL” in col. 5, lines 17-18, 26-27.

Regarding claim 4, Embree further disclose the claimed subject matter “wherein the preconditioner includes a loop having a loop gain, wherein the loop gain operates to attenuate phase noise introduced internal to the preconditioner” in col. 3, lines 31-32.

Regarding claim 5, as indicated earlier, it would be advantage to implement the PLL with a DPLL. Therefore, “preconditioner” of Embree constituted by combination of

elements 110, 120, 125, 130, 140, would have been implemented with a DPLL (i.e., as that in Adams). With such combining in mind, Embree and Adams further discloses the claimed subject matter “a phase detector including a first input which receives the input clock signal and a second input, wherein the phase detector includes an output” (Embree, Fig. 2, element 120); “a loop filter having an input coupled to the output of the phase detector and including an output” (Embree, Fig. 2, element 125); “a voltage controlled oscillator (VCO) having an input coupled to the output of the loop filter and including an output” (Embree, Fig. 2, element 130”; “a latch having an input coupled to the output of the VCO, an input which receives the master clock signal, and including an output which generates the modified clock signal, wherein the latch synchronizes the modified clock signal to the master clock signal, wherein the output of the latch is coupled to the second input of the phase detector to provide the modified clock signal to the phase detector” (Embree, Fig. 2, element 140 and Adams, Fig. 3, elements 70, 85, 87, 88).

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Esaki (US 6,275,553) discloses Digital PLL Circuit And Clock Generation Method.

Yoo (US 6,462,592) discloses Clock Signal Converting Apparatus Of A Transmission System.

Fallisgaard et al. (US 6,664,860) disclose Programmable Oscillator Circuit And Method.

Yamada et al. (US 4,954,824) disclose Sample Rate Conversion System Having Interpolation Function With Phase Locked Clock.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dac V. Ha whose telephone number is 571-273-3040. The examiner can normally be reached on 5/4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Dac V. Ha
Examiner
Art Unit 2634